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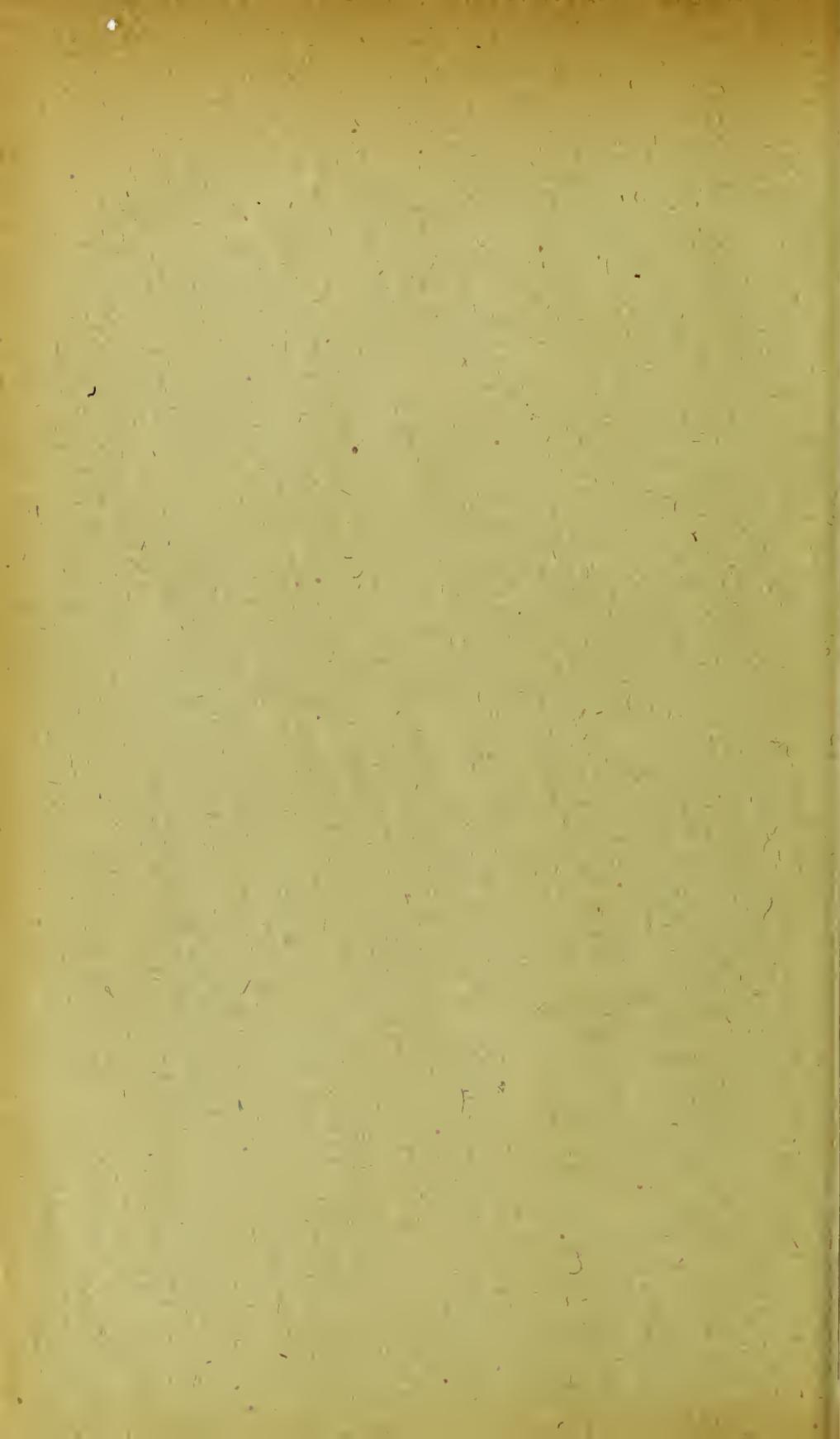
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MEDICO-CHIRURGICAL SOCIETY OF GLASGOW.

MEETING V.—16TH DECEMBER, 1910.

SPECIMENS SHOWN BY DR. JOHN H. TEACHER.

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1. A specimen illustrating regeneration of the liver.

S. E., aged 5, was admitted to the Glasgow Royal Infirmary, under Dr. G. S. Middleton, suffering from jaundice with enlarged liver. Diagnosis: biliary cirrhosis.

Three months before admission patient's mother noticed her becoming yellow. Nothing further was noticed till about a week before admission, when she became much yellower and complained of pain in the abdomen after eating. There was diarrhoea, and the stools were soft and whitish-yellow in colour. The urine was high coloured, and contained bile-stained casts. She was very listless, and had lost much weight.

Great enlargement of liver and spleen was found, the liver dulness, from palpable edge to limit of percussion, measuring in the umbilical line 4 inches, and in the axillary line 5 inches. In the middle line the edge was palpable 3 inches below the xiphoid. The spleen extended $2\frac{1}{2}$ inches below costal margin.

30th September, 1909.—Dismissed. Colour almost normal, and liver and spleen, though palpable, very much reduced in size. Treatment was with $\frac{1}{4}$ gr. doses of calomel.

6th December, 1909.—Re-admitted with all her old symptoms

and the liver and spleen almost as large as before. She was fairly well but listless till the evening of 12th December, 1909, when she turned suddenly ill and screamed out frequently. At first it was thought that the pain was due to the liver condition, and poultices were applied but without relief. She became unconscious, with retraction of head, and the pupils alternately contracting and dilating irrespective of light. She was very noisy. No paralysis was noticed. At 9 o'clock she was quite comatose. No Cheyne-Stokes breathing. Pupils did not react to light. Muscles flaccid. No facial paralysis evident. Died at 9:10 A.M.

Summary of post-mortem examination (15th December, 1909).—Extremely fibrous liver, with irregular tumour-like masses of liver tissue through it. Tubercular mesenteric glands.

External appearances.—The body was considerably emaciated, and the belly was remarkably protuberant. Rigor mortis was slightly present in the legs. The body generally was jaundiced, and the conjunctivæ were yellow.

Thorax.—Pericardium was healthy, and contained about 3 oz. of clear bile-stained fluid. The heart showed no lesion.

Lungs.—With the exception of a few areas of collapse they showed nothing abnormal.

There were some moderately enlarged mediastinal glands, but they were not caseous.

Abdomen.—Contained a considerable quantity of clear bile-stained fluid.

The liver appeared somewhat enlarged for the size of the child and dense in consistency. The general outline of the organ was fairly well preserved, but there were large nodules of dark greenish-yellow colour projecting from it at various points. These were smooth on the surface, tending to be globular in shape, and were much softer than the liver generally. In section, the structure, which preserved the form of the liver, was of a pale greyish colour and fibrous consistence. Throughout the organ there were masses of greenish-yellow soft tissue, apparently bile-stained liver, and the nodules seen externally were of the same composition. There was oedema of the brain.

Microscopic examination showed that the pale tissue which preserved the outline of the liver consisted of rather dense connective tissue, with abundant bile-ducts scattered through it, but no hepatic tissue. This composed a very large part of the entire liver. The greenish-yellow nodules varied greatly in size; the larger masses were principally situated in the

posterior part of the liver. They were composed of liver tissue, somewhat irregularly disposed, with distinct bands of connective tissue between the lobules. In parts, however, there was very little of the lobular arrangement to be made out. There was abundant evidence of proliferation of the liver cells in the form of large multinucleate cells. There was a considerable amount of fatty change and biliary pigmentation.

Conclusion.—The case appears to have been one of some inflammatory condition of the liver, with great destruction of the hepatic tissue, which was subsequently regenerated in the form of rounded masses by hyperplasia, probably of surviving islets of liver cells. A very similar condition has been described following recovery from acute yellow atrophy. (W. G. MacCallum, in vol. x of *Johns Hopkins Hospital Reports*, and others.)

2. *Hyperplasia of liver tissue following extreme venous congestion.* X

C. M'R., aged 7, was admitted to the Glasgow Royal Infirmary on 3rd March, 1909, under the care of Dr. M'Kenzie Anderson. Died, 29th July, 1909.

Patient had rheumatic fever five years ago, with cardiac complications. After she got up, her face and legs swelled, and she spent most of her time since then in bed, suffering from swelling of the legs, body, and face, breathlessness, &c. While in the ward the patient was never able to lie down, was always very livid about the face, and had large pulsating veins in the neck. Cyanosis was so marked a feature of the case as to suggest a congenital condition. Both heart and liver were greatly enlarged.

Summary of post-mortem examination (29th July, 1909).—Cardiac hypertrophy and dilatation, hydro-pericardium, ascites, mitral regurgitation, chronic venous congestion, broncho-pneumonia of right lung. Liver showed extreme venous congestion, with large tumour-like nodules.

External appearances.—There is swelling of the abdomen, and oedema of dependent parts.

Thorax.—There is marked bulging forwards of the anterior thoracic wall. No part of either lung was visible from the front, owing to the enormous enlargement of the cardiac area. There were 5 or 6 oz. of clear fluid in the pericardial sac. The heart, which weighed $11\frac{1}{4}$ oz., was hypertrophied and greatly dilated. The aortic and pulmonary valves were healthy and competent. The mitral orifice was dilated, and

the valves were probably insufficient to close it. There was also some adhesion between the groups of chordæ tendinæ, but no definite stenosis or deformity of the cusps.

Abdomen.—Contained a large amount of clear ascitic fluid. The liver showed an extreme degree of chronic venous congestion and fibrous induration. The external surface showed a nodular irregularity, which suggested the presence of tumours in the organ. On section it presented an extraordinary appearance, being studded with pale yellow and white rounded masses like tumours set in a ground of advanced nutmeg liver.

Histologically there was found to be very advanced chronic venous congestion, with much atrophy of the liver tissue and cyanotic induration. This condition ceased almost completely at the edges of the yellow nodules, which consisted of hepatic tissue arranged in lobules, which were much above the normal size, and showed pronounced fatty change in their peripheral parts. There was very little venous congestion in these areas. No evidence of active proliferative change on the part of the liver cells could be made out.

The condition appeared to be one of extreme compensatory hyperplasia of certain areas of liver tissue in an organ which had undergone much atrophy owing to chronic venous congestion.

3. Case of rupture of a papillary muscle of the left ventricle of the heart.

J. S., aged 64, lavatory attendant, was admitted to the Glasgow Royal Infirmary on 24th April, 1909. He had been picked up unconscious, and brought in at once. The pupils were dilated and fixed. The action of his heart was irregular, and the sounds were weak. He died ten minutes after admission. There was no examination of his urine.

He had always been a sober, temperate man, and had worked at his trade of stonemason until two years ago. He had been feeling ill for about a week, and had told his friends that he felt sure there was something wrong with his heart. He had scarcely eaten anything for about a week, and had become sallow and rather yellow in complexion.

Abstract of report of post-mortem examination.—The body was that of an old but strongly built and well-nourished man.

Thorax.—The lungs were extremely oedematous. They were universally covered by old fibrous adhesions. There were some small cretaceous masses and old solidifications, possibly due to silicosis. The bronchi were fairly healthy.

Heart was large and firm, showing marked hypertrophy of the left ventricle. The valves showed very slight thickening. The orifices were of normal size. The myocardium was slightly paler than normal, and the fibres seem to separate readily, and on manipulation the muscle seems to be abnormally brittle. To the naked eye there was no definite evidence of fatty change, myocarditis, or infarction. The coronary arteries were highly atheromatous. The left papillary muscle was completely torn across about the middle, and the edges had a lacerated, blood-infiltrated appearance, and there were haemorrhagic streaks for some little distance on either side of the tear. The edges of the tear were slightly curled inwards.

The liver was intensely congested and oedematous, the spleen somewhat enlarged and deeply congested, and kidneys of advanced granular contracted type.

The meninges were highly oedematous, and there was distinct chronic thickening of the pia arachnoid. The surface of the brain was congested and oedematous. The vessels at the base showed fairly well-marked atheroma.

Microscopic examination.—Sections were prepared from a portion of the larger part of the papillary muscle and adjacent ventricular wall, and of a small portion of the smaller division of the papillary muscle. Sections of the ventricular wall near the papillary muscle, and from a small columna carneae, were cut by the freezing process, and stained with Sudan III. They showed an excess of yellow pigment and fine yellow granules, which seemed to be fatty. Sections stained with osmic acid showed slight fatty degeneration.

The ruptured end of the papillary muscle was found to be covered with white thrombus, containing a few red blood corpuscles and numerous leucocytes. There was an abundant polymorphonuclear leucocytic infiltration between the ruptured muscle fibres. Close to the rupture, the muscle fibres showed various stages of degeneration. Nearly all were shrunken, and had lost their striation and nuclear staining, and throughout the papillary muscle there were irregular areas in which the muscle showed similar changes and leucocytic infiltration. The rest of the muscle was fairly healthy in appearance; striation and nuclear staining being fairly well preserved, but the fibres were rather larger than normal. Pigment was excessive in amount. The blood-vessels appeared to have an excess of connective tissue round them, and some of them showed hyaline degeneration of the whole wall, but no thrombosed vessel was found.

Conclusions.—(1) The condition was one of patchy infarction of the papillary muscle. (2) From the condition of the thrombus on the end of the muscle it was clear that rupture had occurred, in the part examined, some considerable time before the death of the patient, and the condition of infarction may well have commenced about the time he first complained, viz., a week *ante-mortem*. Possibly there was partial rupture in the first place, and death occurred when it became complete.

4. *Case of syphilitic aortitis.*

Mrs. S., aged 33, described as a vagrant, was admitted to the Glasgow Royal Infirmary on 10th July, 1910, in an unconscious condition, with occasional convulsions which appeared to be uræmic. No further information was obtained. She died next day.

Abstract of report of post-mortem examination.—The body was that of a well-built and well-nourished woman. There were tattoo markings on both arms, and several small non-pigmented and superficial cicatrices about both wrists, one on right thigh, and one about the middle of right leg on the anterior surface. There was no oedema.

The lungs were oedematous but otherwise healthy. The heart, normal in size with abundant epicardial fat and considerable fatty infiltration of both ventricles. There was diffuse thickening of all the coats of the aorta at its commencement, and one large slightly raised atheromatous patch with distinct tendency to cicatricial contraction. The thickening extended the whole length of the arch of the aorta. There was acute nephritis, but nothing else of note in the abdomen.

Head.—There was a slight thickening and oedema of the meninges. The vessels at the base of the brain appeared quite healthy. Nothing was found in the brain itself.

Microscopic examination of a portion of the aorta showed a very striking infiltration of the tunica media, with areas of round cells and giant cells of the type commonly seen in tubercles. There was well-marked "endarteritis proliferans," and great destruction of the elastic tissue of the tunica media. There was some tendency to fibrosis of the cellular areas, but no caseation. Sections were examined for tubercle bacilli with negative result. Unfortunately the condition was recognised too late for application of Levaditi's method of staining for spirochaetes. The condition is typical of what has been described by Chiari and others as syphilitic aortitis.

5. *Specimen of haemorrhage into the pons varolii due to head injury.*

N. M'G., a farm labourer, was admitted to Glasgow Royal Infirmary, under Mr. J. Hogarth Pringle, on 1st December, 1910, in an unconscious condition, having fallen head first down a steep bank into the bed of a stream. There was a large scalp wound above and behind the left ear.

Post-mortem examination (2nd December, 1910).—There was a fracture with slight depression in the squamous part of the temporal bone, and a fissure extending through the petrous portion and sella turcica into the right middle fossa. There had been much subdural haemorrhage from small lacerations of the frontal and parietal lobes of the cerebrum and the right lobe of the cerebellum.

On opening the fourth ventricle, several dark streaks, suggestive of haemorrhages into the substance of the pons, were seen near the upper end of the floor, and on incision numerous small lacerations were found principally in the upper two-thirds of the pons. There was very little laceration around the aqueduct of Sylvius, and none in the medulla or central parts of brain and cerebellum.

6. *Specimen of multiple minute haemorrhages into the pons varolii.*

W. L., aged 64, car washer, was admitted to Glasgow Royal Infirmary, under the care of Dr. T. K. Monro, having had a fit on the street. Disease: nephritis. On examination his urine was found to be loaded with albumen. He had had several fits at varying intervals during the month preceding admission, and about a fortnight before admission he had sudden failure of vision.

On admission there was oedema of the feet and legs and puffiness under the eyelids. There was a faint V.S. murmur at the apex, and the superficial area of cardiac dulness was enlarged. The patient at first made a little progress, but he became more lethargic in the beginning of February, and about the 15th fell into complete coma, and he died on Monday morning, 20th February.

Post-mortem examination (21st February, 1910).—Chronic interstitial nephritis. Uræmia.

External appearances.—The body of a very done looking man. Lower limbs not oedematous.

Thorax.—Heart was enormously hypertrophied—the left ventricle being chiefly affected. There was advanced patchy atheroma of the aorta and coronary arteries.

Abdomen.—The kidneys showed extreme cirrhosis of the small red type, with marked thickening of the blood-vessels.

Head.—There was pronounced thickening and some cedema of the pia arachnoid. The arteries showed advanced atheroma. The substance of the brain was cedematous. There were no haemorrhages or softenings in the basal ganglia, but there were numerous red dots like minute haemorrhages scattered through the upper part of the pons varolii. Microscopical examination showed them to be minute haemorrhages, apparently quite recent.

